

**STATE OF CALIFORNIA**

**Energy Resources Conservation  
And Development Commission**

In the Matter of:	)	Docket No. 00-AFC-14
	)	
Application for Certification for	)	
The El Segundo Power Redevelopment	)	
Project	)	
_____	)	

**WRITTEN REBUTTAL TESTIMONY OF EL SEGUNDO POWER II LLC**

El Segundo Power II LLC (“ESP II”) submits its written rebuttal testimony pursuant to the Committee’s Notice of Evidentiary Hearing issued on January 17, 2003.

**I. SUMMARY**

This project should be approved because no issue is raised in the direct testimony of any party that requires the denial of this application. Issues in the areas of Air Quality, Land Use, Visual Resources, Alternatives, and Aquatic Biology were raised in the direct testimony submitted by various parties. Importantly, no party has submitted any testimony or evidence that establishes that the proposed project does not comply with any applicable LORS or that the project would have any significant effect on the environment.

Each of the issues areas raised in the direct testimony is addressed below. In Air Quality, ESP II addresses the concerns raised by a few parties and reiterates that it is in agreement with CEC staff regarding its proposed conditions of certification and its conclusion that ESPR complies with all applicable LORS and the California Environmental Quality Act (“CEQA”). In Land Use, ESP II responds to the City of El Segundo’s argument for donation of public land under Public Resources Code § 25529. ESP II shows that Public Resources Code § 25529 does not support the City of El Segundo’s claims. In Visual Resources, ESP II addresses landscape issues raised by two parties. ESP II agrees with CEC staff’s proposed conditions of certification in the area of Visual Resources.

In Alternatives, ESP II rebuts claims by CEC staff, Santa Monica Baykeeper and Heal the Bay (Santa Monica Baykeeper and Heal the Bay will collectively be referred to

hereinafter as “Heal the Bay”) that the alternative cooling option proposed by CEC staff is feasible. In fact, ESP II further shows that the cooling option using non-disinfected secondary effluent from Hyperion Treatment Plant for once through cooling at ESGS is incapable of being built or operated. Physical engineering and scientific principles as well as environmental and other legal requirements prevent the cooling option from being feasible.

Biology represents the only contested issue with CEC staff, which is also contested by Heal The Bay. CEC staff continues with its argument that there are “serious, unmitigated adverse direct and cumulative entrainment, impingement and thermal impacts which the once-through cooling system proposed for this project will cause to the biological resources of Santa Monica Bay.” Staff Testimony, page 2. CEC staff’s testimony is problematic for several reasons. First, CEC staff has never acknowledged the simple fact that the once through cooling system that will be utilized by this project has been in existence for almost 50 years and has been extensively monitored by the Los Angeles Regional Water Quality Control Board (hereinafter the “Los Angeles Regional Board”), which includes a complete 316(b) study. As recently as 2000, the Los Angeles Regional Board has never found any significant impact associated with the operation of El Segundo Generating Station (“ESGS”). Moreover, CEC staff and Heal The Bay have never acknowledged or considered the fact that Santa Monica Bay is one of the most studied bodies of water in the world. As a result, large quantities of information are available for analysis and indeed do establish that there are no significant effects associated with the operation of the ESGS.

Second, CEC staff and the Heal the Bay constantly reference “significant impacts.” Neither of these parties, however, identifies what constitutes a “significant impact” or any specific effect that they contend is significant. Throughout this proceeding, it has remained a mystery why CEC staff cannot provide such basic information. Notwithstanding the inability of CEC staff and the Heal the Bay to provide such information, ESP II has set forth a wide range of information that establishes that there are indeed no significant effects.

Third, the positions of CEC staff and the Heal The Bay appear to be predicated, in part, on studies conducted in areas that do not have the same biological characteristics or fish populations as the one in question. It is confusing and disingenuous to use dissimilar information while at the same time criticizing ESP II for its reliance, in part, on the 316(b) study for ESGS. The difference is that the 316(b) study for ESGS was carefully prepared and utilized data from an appropriate surrogate location. CEC staff and other parties instead draw numerous conclusions regarding potential effects of ESPR by direct and indirect reliance upon more distant and dissimilar facilities. ESP II, like California Department of Fish and Game (“CDF&G”) and National Marine Fisheries Service (“NMFS”), has relied upon appropriate and scientifically reliable data to show that ESGS itself, let alone Intake #1 or ESPR, does not and will not have a significant effect on the environment.

## **II. AIR QUALITY**

There are no contested issues between ESP II and CEC staff regarding air quality. Staff, in its testimony, states that the proposed project complies with all LORS including the rules and regulations of the South Coast Air Quality Management District (“SCAQMD”) and that the emissions from the proposed project are fully mitigated. Nonetheless, several parties have raised issues regarding air quality but have not raised or cited any law, ordinance or regulation that is violated by the proposed project.

ESP II provided a detailed analysis of the effects of the project in Section 5.2 of its Application for Certification (“AFC”). Importantly, the analysis provided by applicant established that there are no significant effects and that no sensitive receptors would be adversely affected by the project. Based on the information previously submitted by applicant, and the findings of compliance by both the CEC staff and the SCAQMD, there are no LORS violations and thus there is no basis to deny certification based on any issue related to air quality.

## **III. LAND USE**

All issues relating to Land Use have been resolved between ESP II and CEC staff. The City of El Segundo is the only party that has raised any issue with respect to land use, and in particular the requirement for a space dedicated for public use under Public Resources Code § 25529. As set forth below, ESP II has complied with the requirements of Public Resources Code § 25529 thereby rendering the issues raised by the City of El Segundo moot.

As part of its Landscape Concept Plan, ESP II has proposed to move the fence back by approximately three feet along the bike path where feasible to enhance public use along the western boundary of the facility. This will allow greater public access to the bike path area by providing benches and space for potential pedestrian use, which is currently prohibited by county ordinance. In its direct testimony, the City of El Segundo contends that ESP II’s proposal is insufficient under Public Resources Code § 25529 and requests that a 1.2 acre area in the southwest corner of applicant’s property be set aside for public use.

ESP II previously proposed the concept of a 1.2 acre public use area on the southwest corner of the facility. To this date, an agreement has not been worked out whereby issues relating to maintenance, security and liability have been resolved. As a result, ESP II has proposed moving the fence back in specified areas along the bike path to increase the space to allow for potential pedestrian traffic and benches. ESP II remains willing to discuss this issue with the City of El Segundo but does not believe that this issue can be resolved prior to the evidentiary hearings. If an agreement can be reached, Condition of Certification Land –9 already vests the CPM with the authority to address safety and security issues associated with any space designated for public use. Thus, if any agreement is reached between ESP II and the City of El Segundo, the CPM can

address any issues relating to use without having to involve the full commission. Legal pedestrian use of the bike path still could not occur without a county ordinance amendment.

In any event, Public Resources Code § 25529 does not require the amount of land for public use that is being requested by the City of El Segundo. As indicated in staff's testimony, Public Resources Code § 25529 does not set forth specific requirements for the amount of land that is to be provided for public use or the type of uses that the land must be used for. Thus, under the express terms of the statute, there is no basis to require any specific amount of land, including the 1.2 acres requested by the City of El Segundo.

Even more important, Public Resources Code § 25529 does not specify if it is applicable to repowering projects. Public Resources Code § 25529 only specifies that it is applicable to facilities that are "proposed to be located in the coastal zone." El Segundo Generating Station has been an existing facility for over 40 years, having been constructed in the 1950's and 1960's. Based on the express language of the statute, there is a clear and legitimate argument that the statute does not apply to existing facilities that are being repowered.

Despite ambiguities of the statute, the issue of public access and public use was previously addressed by Southern California Edison ("SCE" the prior owner of the facility), the County of Los Angeles, and Chevron. In particular, an agreement was entered into whereby SCE and Chevron provided land to construct the existing bike path, which provides public access and public use on the western boundary of the facility. Public access and public use was further addressed under the Coastal Act through the adoption of the City of El Segundo's Local Coastal Plan ("LCP") by the California Coastal Commission. The LCP found that sufficient public use and access was provided through the bike path and access to the north and south of the facility and no other forms of access or use were required under the Coastal Act. Based on the approval of the LCP by both the City of El Segundo and the Coastal Commission and findings of sufficient public access and use contained therein, additional space for public use is not necessary. Nonetheless, ESP II has proposed an enhancement that will allow greater public use in specified areas along the bike path.

#### **IV. VISUAL RESOURCES**

All issues relating to visual resources have been resolved between ESP II and CEC staff. As with other issue areas, other parties have submitted testimony in opposition to visual resources. However, no party has submitted or cited any violation of any applicable LORS making the basis of their claims to be somewhat ambiguous. Nonetheless, there is no basis to deny approval of this project on grounds of Visual Resources since there is no LORS violation or any significant effects identified.

Intervenors Messrs. Nickelson and Perkins have raised issues concerning Visual Resources. Specifically, Mr. Nickelson claims that "[a]s of this date, the applicant has not provided documentation that demonstrates how screening of the El Segundo Power II, LLC will be met." Contrary to Mr. Nickelson's assertion, ESP II has provided an

updated Landscape Concept Plan in addition to many renderings of the berm, which ESP II agreed to build at the request of intervenors. ESP II believes that Mr. Nickelson may be requesting renderings shown by CEC staff at the December 18, 2002 Visual Resources Workshop. If that is the case, ESP II does not have custody of these renderings and thus, cannot provide them to Mr. Nickelson or any other party. Mr. Perkins raises similar issues concerning the “Landscape Concept Plan.”

At the December 18, 2002 Visual Resources Workshop and again at the January 7, 2003 Committee Pre-Hearing Conference, it was pointed out that ESP II can only provide what is called a “Landscape *Concept* Plan” to intervenors at this time. It was further discussed that once construction commences, ESP II will begin what is anticipated to be a series of meetings with the City of Manhattan Beach, the City of El Segundo, and residents to develop a *final* “Landscape Plan.” It is at that time that final visual screening plans will be developed. These meetings will be held so that city planning officials and residents have an opportunity to provide input to the finite details of plantings, view sheds, and screening of the plant. More importantly, the CEC CPM, will ensure that ESP II complies with all Conditions of Certification which include the assessment of the visual screening.

## **V. ALTERNATIVE COOLING OPTION**

In their testimony, CEC staff states that the use of “reclaimed wastewater” from the Hyperion Treatment Plant appears to be feasible as an alternative to using seawater from Santa Monica Bay for cooling purposes.<sup>1</sup> Similarly, the Heal the Bay claim that using non-disinfected secondary effluent from the Hyperion Treatment Plant is a feasible alternative. Both are wrong. It is important to note that neither staff nor Heal the Bay performed either a preliminary or a detailed regulatory compliance, engineering or environmental assessment to determine if the alternative proposal is feasible. As a result, both CEC staff’s and Heal the Bay’s assertions regarding the alternative proposal are predicated on invalid regulatory, technical, and environmental assumptions.

CEC staff and Heal the Bay further assert that additional studies are necessary to fully understand the feasibility of this option. As set forth in its opening testimony, ESP II has performed a regulatory, engineering, and environmental feasibility assessment and has determined that the use of non-disinfected effluent from the Hyperion Treatment Plant is neither feasible under the California Thermal Plan nor technically feasible and may result in significant environmental effects. Given these fundamental flaws in the proposed option, there is no valid reason under any generally accepted engineering or environmental practice to conduct any additional studies or analyses regarding the alternative to use non-disinfected secondary effluent from the Hyperion Treatment Plant for cooling as proposed by CEC staff.

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<sup>1</sup> Staff’s use of “reclaimed waste water” is misleading because Hyperion Treatment Plant is only capable of providing non-disinfected secondary effluent, which has no nutrient removal and contains high concentrations of bacteria and other pathogens.

Below, the basis for determining that the proposed alternative to use non-disinfected secondary effluent from the Hyperion Treatment Plant for cooling is infeasible is summarized. Thereafter, the specific points raised by Dr. Gold of Heal The Bay are addressed.

**A. THE USE OF NON-DISINFECTED SECONDARY EFFLUENT FROM THE HYPERION TREATMENT PLANT IS NOT FEASIBLE AND NO FURTHER ANALYSIS IS WARRANTED OR NEEDED**

**1. Due To Restrictions Imposed By The Thermal Plan, Requiring Use of Non-Disinfected Secondary Effluent From Hyperion Treatment Plant Would Prevent ESGS From Operating At Any Level Of Output For A Majority Of The Year Including The Peak Summer Months**

The discharge of thermal wastes from once-through cooling associated with ESGS's power generation through Hyperion Treatment Plant's Five-Mile Outfall would require a separate NPDES permit and would be classified as a "new discharge" under the California Thermal Plan. Section 3.B(3) of the Thermal Plan establishes water quality objectives for "new discharges" to coastal waters and provides that the maximum temperature of the thermal wastes discharges shall not exceed the natural temperature of receiving waters by more than 20° F. The applicable receiving water is at the point of discharge – i.e., near ocean bottom, five miles offshore, at a depth of about 190 feet (60 m).

The near bottom location is the location at which the discharge would occur and would be the point for determining compliance based on the unambiguous mandate of the Thermal Plan. Moreover, it is expected that the Los Angeles Regional Board would take the most conservative approach to safeguard against the public health risks associated with the Hyperion Treatment Plant alternative as proposed by CEC staff. Particularly, *the CEC staff's proposal would create a thermal discharge of non-disinfected secondary effluent*. The water quality and public health concerns raised by such a discharge is that of pathogens reaching the beaches. The use of the near bottom temperature would be the most conservative approach and provide the greatest amount of protection to water quality, public health and ultimately the economy of the communities that rely on the beaches. Thermal discharges within the Los Angeles Regional Board's jurisdiction are associated with power plants, and, as these discharges do not include non-disinfected secondary effluent, are located near shore in relatively shallow water. These are all existing discharges. There is little or no precedent for a deep water thermal discharge of non-disinfected secondary effluent in the Los Angeles Regional Board's jurisdiction; however, for the reasons stated above, we would expect that the Los Angeles Regional Board would take the most conservative approach toward preventing pathogens from reaching beaches.

In any event, the Hyperion Treatment Plant alternative proposed by CEC staff would not comply with the Thermal Plan if either the near bottom temperature or the surface temperature was used by the Los Angeles Regional Board. As the near ocean bottom temperature at the location of the outfall ranges from 51° F in June to 56° F in

December, it is anticipated that the temperature limitation applied to the ESPR discharge would range from 71° F (51° F + 20) to 76° F (56° F + 20). Using surface temperature as the reference, the temperature limitation applied to the ESPR discharge would range from 77.5° F (57.5+20) to 86° F (66+20).

Compliance with the Thermal Plan would depend on the amount of “cooling potential” available from the non-disinfected secondary effluent, when the outlet temperature to the ocean is constrained by a maximum 20-degree temperature limitation. The average daily temperature of the current non-disinfected secondary effluent discharge from Hyperion Treatment Plant varies between 72.8° F in February and 83° F in August. Given these limits and the temperature of the Hyperion Treatment Plant non-disinfected secondary effluent, there would not be sufficient cooling capacity available for cooling the project in conformance with Thermal Plan requirements.

This “cooling potential” is illustrated in Figure 9 of ESP II’s opening testimony. Assuming that the near bottom ocean waters would be designated by the Los Angeles Regional Board as the receiving water, and assuming a Thermal Plan compliance limit of 20 degree increase in temperature over the receiving water ambient, Figure 9 illustrates that during the entire year, the temperature of the non-disinfected secondary effluent provided by the Hyperion Treatment Plant is too warm (relative to the deep ocean temperatures) to allow for any effective cooling of the power plant while complying with the Thermal Plan. In fact, for the months April through November, the temperature of the secondary effluent produced by the Hyperion Treatment Plant exceeds the temperature limitation, indicating that no cooling potential whatsoever is possible during those months. Simply put, the power plant could not operate most of the year, and in no months could the plant operate in compliance with the Thermal Plan.

Assuming that an adequate volume of non-disinfected secondary effluent from the Hyperion Treatment Plant is available for cooling, the Thermal Plan variance that would be needed to accommodate this discrepancy would be no less than 10 degrees F (the difference between the HTP non-disinfected secondary effluent temperature and near bottom temperatures, before any power plant cooling takes place). It is unreasonable to assume that the Los Angeles Regional Board would grant a variance of this magnitude because there is an inherent risk in adding the thermal waste to the non-disinfected secondary effluent. The specific risk is the potential surfacing of bacteria and other pathogens and the potential exposure of the beaches to those pathogens. We have seen very strict enforcement of temperature limitations on existing thermal discharges at the El Segundo Generating Station by the Los Angeles Regional Board; and, those discharges do not include non-disinfected secondary effluent. In some cases, a thermal exceedance as small as 0.2 degrees F has triggered a Notice of Violation (“NOV”).

The same analysis described above is repeated using shallow ocean temperature data. Once again, the average effluent and ocean temperature data can be used to determine the amount of cooling capacity that would be available to ESPR. In this case, however, it is assumed that the shallow waters are designated by the Los Angeles Regional Board as the receiving water, and that the same Thermal Plan compliance limit

of 20 degree increase in temperature over the receiving water ambient applies. Figure 10 in ESP II's opening testimony illustrates that throughout the year, there is a very small positive temperature gap between the effluent temperature and the shallow ocean plus 20 degrees compliance limit. It should be noted, however, that even this small increment is very conservative, and possibly non-existent, because the analysis relies on average effluent temperatures for each month and ignores maximum effluent temperatures that are typically experienced during each month. Maximum daily effluent temperatures of 85 F and 86 F are common in hot summer months of July, August and September (CLA, 2003).

## **2. Hyperion Treatment Plant Cannot Supply ESGS With Enough Water To Meet Its Cooling Needs**

As an additional means of analyzing the feasibility of the Hyperion Treatment Plant alternative, an industry standard thermodynamic model was utilized to determine the volume of water required to meet the cooling needs of the facility while at the same time satisfying the stringent requirements of the Thermal Plan. Based on this analysis, the Hyperion Treatment Plant alternative was found to be infeasible on grounds that it cannot supply enough water.

Three scenarios were analyzed using winter, summer, and spring/fall averages for both non-disinfected secondary effluent temperatures and ambient receiving water temperatures. These three scenarios were analyzed under the two receiving water conditions: deep ocean and shallow ocean temperatures. The Thermal Plan compliance limit of plus 20 degrees was used. The results of this analysis are summarized below in Table 1 using the deep ocean temperatures, and in Table 2 using the shallow ocean temperatures. The results clearly show that the most lenient scenario with respect to Thermal Plan Limits still requires greater than 2,000 MGD, which far exceeds available secondary effluent from the Hyperion Treatment Plant.



**Table 1**  
**Cooling Potential of Non-Disinfected Secondary Effluent Using Typical Ocean Bottom Temperatures**

Season	Low Average Effluent Temp (deg F)	High Average Ocean Temp (deg F)	Thermal Plan Limit (Ocean Temp +20)	Delta T Available for Cooling (deg F)	Total Flow Requirement (MGD)
Winter	73	55	75	+2	> 2,000
Summer	82	52	72	-10	No Operations Possible
Spring/Fall	75	54	74	-1	No Operations Possible

**Table 2**  
**Cooling Potential of Non-Disinfected Secondary Effluent Using Typical Ocean Surface Temperatures.**

Season	Low Average Effluent Temp (deg F)	High Average Ocean Temp (deg F)	Thermal Plan Limit (Ocean Temp +20)	Delta T Available for Cooling (deg F)	Total Flow Requirement (MGD)
Winter	73	57	77	+4	> 1,000
Summer	82	64	84	+2	> 2,000
Spring/Fall	75	64	84	+9	> 450

Even this result is not likely because the Los Angeles Regional Board will require that ESPR's thermal discharge not exceed bottom temperatures plus 20 degrees.

Table 1 shows that under these circumstances, there is no cooling potential possible except during winter months. Even during the winter however, 2000 MGD (mainly due to the limited available temperature rise) would still be required which greatly exceeds the 90-100 MGD of secondary effluent available during reduced flow periods from the hyperion treatment Plant.

### **3. There Is Not Enough Space To Run The Necessary Pipes To And From The Hyperion Treatment Plant**

Even if the larger volumes of secondary effluent were available from the Hyperion Treatment Plant, costs and off-site linear impacts associated with the supply pipeline system would be much greater than identified in the CEC staff alternative. To meet the once-through cooling demands, five to six 10 ft. diameter supply pipes and five to six 10 ft. diameter return pipelines would be required or, to put the size of the space required for the incoming and outgoing effluent handling vessels into perspective, two fifty feet to sixty feet diameter pipes would be required to handle the required volumes.

This diameter would be equal to between three and four striped lanes of Imperial Highway, or the width of the 105 Freeway. There is simply no space for placement of these pipelines along or under Vista Del Mar Blvd. Also, Chevron management has emphasized emphatically that not only is their adjacent terminal facility not available for such an operation, but also their existing piping infrastructure under Vista del Mar Blvd., which would require traversing, must not be disturbed, as would occur under the CEC staff alternative. Further, the five mile outfall does not have sufficient capacity to convey this volume of effluent.

**B. REBUTTAL TO HEAL THE BAY'S TESTIMONY (MARK GOLD)  
REGARDING THE HYPERION TREATMENT PLANT ALTERNATIVE  
COOLING OPTION**

The following testimony addresses the written testimony of Mark Gold. Mark Gold makes generalized statements regarding the feasibility of the Hyperion Treatment Plant alternative proposed by staff but does not provide any analysis that establishes the feasibility of the proposal. Dr. Gold's resume does not indicate that he is qualified to render any opinions on the engineering or technical feasibility of the proposal. Accordingly, Dr. Gold's testimony should be afforded little if any evidentiary weight. Nonetheless, Dr. Gold's specific comments are addressed below. For convenience, the specific reference to Dr. Gold's testimony is set forth and ESP II's response follows.

Paragraph 14 states, in part: *"The Hyperion Treatment Plant (HTP) ... currently treats approximately 370 MGD of sewage from 4 million Los Angeles and Los Angeles area residents."*

**ESP II Response to Paragraph 14:**

According to data provided by the City of Los Angeles Bureau of Sanitation, typical daily flows through the secondary treatment system (prior to off-take by the Hyperion Treatment Plant and West Basin Municipal Water District) are less than 370 MGD. The average daily flows for the years 1999 through 2002 were: 356, 348, 350, and 335 MGD, respectively. Once adjusted for the average daily volumes provided to the West Basin Municipal Water District for reclamation, the average daily flows sent to the 5-mile outfall during these same years were: 337, 326, 326, and 307 MGD, respectively. However, as stated in Applicant's original testimony, and acknowledged by CEC staff in the FSA, the critical design factor is not the average daily volumes, but rather the hourly variations in availability of secondary effluent throughout the day. The Bureau of Sanitation has stated that on low flow days, the amount of water available for once-through cooling purposes is likely to be in the range of 90-100 MGD.

Paragraph 15 states, in part: *"Even assuming no increase in influent volumes to HTP, there will be an average of 240 MGD available for cooling water use at El Segundo. The fact that peak daily energy use closely coincides with peak flows at HTP demonstrates further that cooling water volume should not be a problem."*

**ESP II Response to Paragraph 15:**

This statement assumes that power plant design can be optimized so as to provide variable generation to the grid throughout the day, coinciding with the hourly fluctuations in water availability, and that this variable generation would coincide with “*peak daily energy use*.” Certain fundamental design assumptions implicit in this statement warrant clarification.

The concept of utilizing a limited heat sink and fluctuating cooling water flow source is largely unprecedented and certainly not normal in cooling system design for power plants. Fluctuating in this case means limiting fluctuations occur daily as well as seasonally. Typical cooling system designs for power plants include:

1. Once through cooling from ocean or inland water way
2. Wet cooling utilizing various cooling tower designs
3. Dry cooling
4. Hybrid designs utilizing combinations of wet and dry cooling

In each of these typical cooling system designs there exists the flexibility to design cooling flows to meet power plant performance capabilities for given environmental conditions. Establishing cooling system flows are accomplished by sizing pumping systems for once through cooling systems, pumping systems/cooling towers for wet cooling systems and fan/condenser equipment for dry cooling systems. The use of the fixed and limited cooling water source from the Hyperion Treatment Plant does not allow for this important design flexibility.

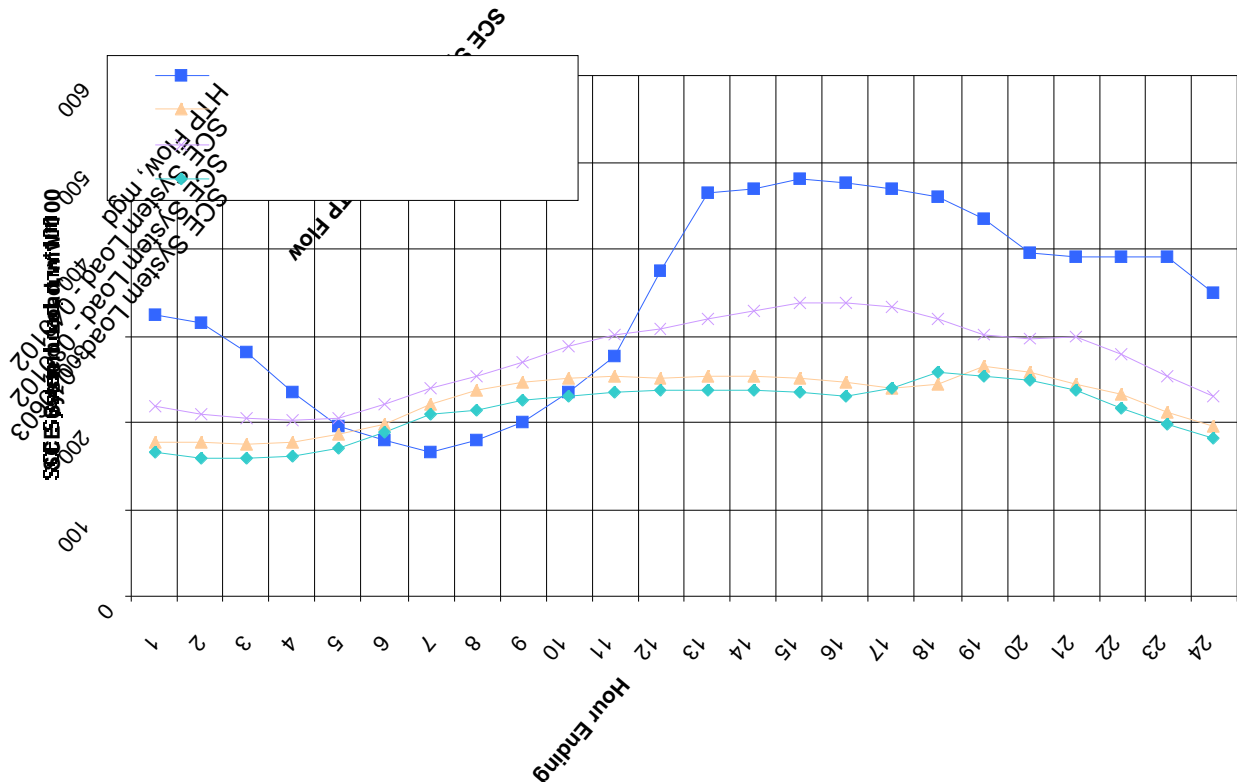
Limited cooling water flow especially impacts combined cycle performance due to the poor performance that exists at partial loads. For example, if available cooling water flow is such that only 70% of plant capacity is achievable, heat rates and air emission offset requirements will probably not warrant commercial operation. Furthermore, additional reduction of plant loads or capacity factors will raise heat rates, and compound the inherent risk that running at partial load has of causing excessive damage to major power plant equipment.

In addition, it is not typical power plant design to incorporate a cooling water source for which the power plant owner/operator does not have either control over the cooling water source (which is common in once through cooling systems) or back up sources for cooling system makeup.

One critical aspect of limiting cooling flow is limiting output of the plant when grid requirements emerge due to loss of other sources or constraints on transmission that require the need for additional local power.

Not only are the expected hourly flow rates from the Hyperion Treatment Plant limited but also they do not closely match expected Southern California Edison system load demands thus preventing optimization from matching supply of cooling

water with demand of electricity. Graph 1 shows the typical hourly Hyperion Treatment Plant flow (in mgd) as provided by the CEC overlayed on typical Southern California Edison system load curves (mw \* 100) for typical winter, fall/spring and summer days (1/6/03, 8/1/02, 4/1/02).



The most prominent variation occurs in the early morning period from hour ending (HE) 6 to HE8. At the lowest levels of Hyperion Treatment Plant flow during HE7 the system load is only at 70 – 84% of its peak load.

One potential approach to accommodate the low flow periods of the day would be to locate, design, construct and maintain sufficient water storage capacity, and associated piping and pumps, to equalize the flow of effluent with cooling demand throughout the day. It has been demonstrated, however, that irrespective of possible increase of effluent supply gained through equalization (conceivably up to 300 MGD could be used in this scenario), there is still an inadequate supply of non-disinfected secondary effluent available from the Hyperion Treatment Plant. Even at this higher flow rate, the secondary effluent is too warm to provide any effective heating capacity while maintaining compliance with the California Thermal Plan.

Paragraph 16 states: *“Use of HTP secondary treated effluent would eliminate impingement and entrainment impacts of the El Segundo Plant. Without pumping in seawater, there won’t be fish, zooplankton and larvae caught and killed in the El Segundo Plant.”*

**ESP II Response to Paragraph 16:**

*“Use of HTP secondary treated effluent”* is simply not a feasible alternative to the proposed project due to various regulatory, engineering, and environmental issues, as described in our opening testimony, and reiterated herein. Further, the ESGS once-through cooling system is fully permitted and has been studied and monitored for over 30 years by the Los Angeles Regional Board, which has never determined that the ESGS has any significant impact on the designated beneficial uses of the Santa Monica Bay.

Paragraph 17 states: *“Since the HTP is located directly on the coast in an area known for cool ambient temperatures, the treatment process does not appreciably increase wastewater temperature, and the El Segundo plant would never use anywhere near 100% of the effluent from the HTP, it is reasonable to assume that the wastewater cooling project would not lead to violations of thermal limits at the HTP five mile outfall.”*

**ESP II Response to Paragraph 17:**

The effect of the Hyperion Treatment Plant secondary treatment process on the influent temperature is irrelevant. The volume and temperature of the Hyperion Treatment Plant non-disinfected secondary effluent that would be available to the power plant is measured at the end-point of the treatment after off-take by the Hyperion Treatment Plant and by West Basin Municipal Water District, and prior to discharge. The Hyperion Treatment Plant effluent temperature (measured at the discharge pump house) and ambient ocean temperatures (measured at various depths) were presented in our opening testimony. As described therein and summarized above, both the non-disinfected secondary effluent temperatures and the near-bottom ocean temperatures vary seasonally, and these seasonal variations are inversely related during several months of the year. Near-bottom ocean temperatures in the vicinity of the outfall decline in the spring and early summer, while effluent temperatures rise in concert with ambient air temperatures.

The 100° F limit specified in the Hyperion Treatment Plant’s NPDES permit limit would not apply to this new discharge of thermal wastes; rather this would be considered a “new” thermal discharge under the Thermal Plan and a limit of 20° F over the temperature of the ambient receiving water would apply. As shown in Figure 9 or our opening testimony, this divergence results in a significant temperature gap (in excess of the 20° F increase in temperature limit) between effluent and near bottom ocean conditions, resulting in virtually no possibility of effective power plant cooling in compliance with Thermal Plan limits.

Even if the Los Angeles Regional Board were to designate the ocean surface as the receiving water for the purpose of Thermal Plan compliance monitoring, the same temperature limitation applies, although some limited operations could conceivably be conducted, assuming a sufficient supply of secondary effluent were available from the Hyperion Treatment Plant and an adequate conduit system could be constructed to transport the secondary effluent to and from the power plant. As discussed in our

opening testimony and reiterated above, even under the best possible scenario, there is not sufficient secondary effluent available from the Hyperion Treatment Plant to allow reliable power generation.

Paragraph 18 states: *“Construction of the project should not be very difficult. Building one mile of sewer in both directions and designing and constructing intakes, outfalls and installing pumps is an extremely simple project compared to those undertaken by the City of Los Angeles for the HTP upgrade, the West Basin Water Treatment Facility construction and the tens of miles of new and improved sewer line projects that accompanied both efforts. The pipeline is short. The impacts and feasibility of construction appear promising. And the need for innovative technology is minimal.”*

**ESP II Response to Paragraph 18:**

The economic feasibility of upgrading a merchant power plant is not comparable to upgrading the largest sewage treatment plant on the West Coast owned by the City of Los Angeles, permitted and paid for through self-regulated city imposed taxes and usage rates. Although the improvements noted were reasonable and appropriate for the Hyperion Treatment Plant upgrade, they are out of scale for renovation of the power plant. Also, the regulatory, engineering, and environmental issues related to the discharge of unheated non-disinfected secondary effluent are quite different from those that would be faced in a thermal discharge consisting of non-disinfected secondary effluent.

Further, as described in our opening testimony, there is insufficient secondary effluent available from the Hyperion Treatment Plant to meet power plant requirements. If, hypothetically, there were sufficient reliable water supplies, then the volume of water required would necessitate a very substantial pipeline construction project that could not be accommodated in the available rights-of-way.

Paragraph 19 states: *“A detailed feasibility study of the HTP cooling water option is needed. ....Once these studies are completed, a sound decision on the feasibility and the design parameters of the wastewater cooling option can be made by the City of Los Angeles, the CEC and the El Segundo Power Plant.”*

**ESP II Response to Paragraph 19:**

Adequate information is available today to make a sound decision on the feasibility of the alternative to use non-disinfected secondary effluent for power plant cooling. More detailed studies of the proposed alternative to use secondary effluent from the Hyperion Treatment Plant for power plant cooling would be beneficial only if there was a reason to believe that the alternative was feasible. Because the alternative has been shown to be infeasible based on strict regulatory limitations (inability to comply with the California Thermal Plan, regardless of the Hyperion Treatment Plant supply volume), fundamental engineering constraints (lack of reliable water supply) and potentially significant environmental effects, further analysis is neither required nor warranted. Any further analysis would be counterproductive and a waste of time and resources.

## **VI. BIOLOGY**

In this section, ESP II addresses the issue of impacts to marine biology. First, ESP II provides further discussion on its proposed project enhancement flow cap that eliminates the possibility of significant effects to the marine environment. Second, ESP II clarifies that the Santa Monica Bay is not an estuary as has been incorrectly stated by several parties. Last, ESP II discusses the fact that there is sufficient and scientifically valid information regarding intake #1's effects and the biological state of Santa Monica Bay to find that no significant effects will result from this project.

### **A. ESP II'S PROPOSED PROJECT ENHANCEMENT OF A VOLUNTARY FLOW CAP ELIMINATES THE POTENTIAL FOR ANY SIGNIFICANT EFFECTS ASSOCIATED WITH MARINE BIOLOGY**

In order to assure other parties that there are no significant effects, ESP II has proposed to voluntarily restrict future flows at ESGS to that of the most recent five year period. By restricting the use of seawater to the recent baseline, there will be no flow increase caused by ESP II using the most conservative viewpoint and thus no entrainment impacts. There is no known precedent for or environmental necessity for a flow cap. The only customary restriction on flow volume is the daily maximum flow rate that is provided for at ESGS in its NPDES permit.

#### **1. Staff Improperly Calculated The Baseline For Purposes Of The Flow Cap**

In Section I.B.1(a), Paragraphs 1 & 2 of Staff's testimony, CEC staff indicates that due to the recent expiration of the South Coast Air Quality Management District ("SCAQMD") permit to operate units #1 and #2, "all operations of those generating units completely ceased." As a result, CEC staff improperly concludes that the existing cooling water volume for Intake #1 is *zero* (i.e. none) because "It is entirely speculative as to when, if ever, the Applicant will seek to reactivate its air quality permit to operate Units #1 and #2."

#### **a) Idled Status of Boiler Units 1 and 2**

SCAQMD Rule 2009 requires that Best Available Retrofit Control Technology ("BARCT") be installed on boiler units at existing power facilities by January 1, 2003. By letter dated July 11, 2002, the SCAQMD determined that it was cost effective to install Flue Gas Recirculation and Selective Catalytic Reduction (FGR/SCR) technology to achieve 5 parts per million NOx concentration from Boiler Units 1 and 2. SCAQMD's letter was issued after ESP II filed the present AFC for the proposed project. If approved, the license would require demolition of units 1 and 2. Accordingly, ESP II has elected not to install FGR/SCR technology on Units 1 and 2 in anticipation of receiving approval of this project and thereby rendering the retrofit of units 1 and 2 moot. In other words, the NOx reduction option of choice was to "replace" the boiler units with new state-of-the-art combined cycle gas turbine technology, rather than retrofit the existing

boiler units. Further, if FGR/SCR technology were ultimately installed on Units 1 and 2, these units could then operate with unrestricted hours of operation in compliance with the SCAQMD RECLAIM program, processing the full contingent of seawater permitted under its NPDES, which is significantly more than would be allowed under ESP II's proposed flow cap.

**b) Active Status of Intake 001**

ESP II has not requested any alteration of the facility NPDES permit pending the conclusion of this proceeding. To the contrary, intake/discharge 001 is presently operating and will continue to be operated and maintained pursuant to the NPDES permit in the interim until the ESPR project is constructed and ultimately operated. Circulation of cooling water at intake/discharge 001 will continue as an integral part of the operation of the existing ESGS facility. Sanitary treatment unit discharges, plant low volume waste, and stormwater discharges will continue to flow to discharge 001, with ocean cooling water flow a mandatory part of the discharge system. Therefore, regardless of the operational status of Units 1 and 2, the cooling water system is operating and will continue to operate.

**c) Under CEQA The Baseline Is Generally Determined At The Time Of Filing Of The AFC - Rebuttal to CEC Staff Testimony, Section I.B.1(a), Paragraphs 3 & 4**

ESP II has proposed an annual facility wide cooling water flow cap as a project enhancement that is intended to further assure that ESPR does not increase aquatic biology effects above baseline conditions. The most representative baseline period is calendar years 1998 – 2002. ESP II purchased the facility in April 1998 and calendar year 1998 was the first year the facility operated as a merchant power plant in the deregulated power market. Using any period before 1998 would not be representative of how the current deregulated market operates and is not representative of how the facility will operate in the future. Averaging cooling water flow rates for calendar years 1998-2002 provides the most accurate and representative baseline period for current and future power production and marketing structures.

CEQA Guideline § 15125 provides that an EIR must include a description of the physical environmental conditions, as they exist at the time of the publishing of the EIR. This setting will “normally” be the baseline physical conditions by which impacts are determined. This is exactly what ESP II is proposing through the “flow cap”. The AFC initiating this proceeding was filed on December 21, 2000. The conditions that existed with respect to volumes of sea water used for cooling at the plant vary from day to day and thus an average must be used for purposes of determining the “baseline.” As stated above, at the time of the filing of the AFC the plant was being operated as a merchant plant in the deregulated paradigm created by AB 1890. Thus, the best representation of the conditions of the plant at the time of filing the AFC are obtained by averaging the actual flows while the plant was operating under the deregulation, not the prior regulated paradigm of the PUC. This is exactly what ESP II has proposed.



It should be noted that CEQA Guideline § 15125 does not require any specific time frame for fixing the baseline. The time of filing is “normally” the baseline that will be used. The use of the word “normally” is intended to provide the reviewing agency with sufficient flexibility and is an implicit acknowledgement that the proper baseline may be some conditions that exist after the filing of the AFC, such as in this case. In other words, CEQA does not require a zero baseline or an average based on the five years preceding the filing of the AFC as advocated by CEC staff. Further, staff has not identified how their determination of the baseline is a more accurate reflection of the conditions at the time the AFC was filed.

One important fact that has been lost in the discussion regarding the flow cap is that the flow cap is being proposed as an enhancement to assure that there are no significant effects associated with the project thereby making CEQA inapplicable. Through the flow cap, ESP II is volunteering to reduce its cooling water flows (and generating potentials) to levels that are significantly lower than the currently permitted flows allowed by its NPDES permit. In arriving at the proposed flow cap volumes, ESP II analyzed and determined the impact that the reduced flows would have on operations. It should be noted that if ESP II is required to reduce its flows to less than the proposed flow cap, ESP II may be required to cease all operations, possibly in times of peak demand. Based on the fact that the shortfall of a few hundred megawatts of generation led to blackouts in 2000, it goes without saying that forcing ESP II to cease operations could have extremely dire consequences related to the reliability of the grid.

**d) Daily Maximum Flows Are Limited By The Existing NPDES Permit That Cannot Be Circumvented By The Proposed Flow Cap- Rebuttal to CEC staff testimony, Section I.B.1(a), Paragraph 5**

CEC staff’s written testimony claims that the annual flow cap at the 1998-2002 baseline levels would “allow the Applicant to use the allotted water volumes anytime it wanted to, regardless of the “seasonal” needs of the many diverse biological resources which will be adversely impacted by the project.” This is an inaccurate statement and assumption. The facility has, and will continue to have, a maximum daily discharge rate limit in effect for each outfall: 207.01 MGD for discharge 001 and 399.59 MGD for discharge 002. This is the maximum volume of water than can physically be circulated by each of the cooling systems. Consistent with established procedures for similar facilities, the daily limit was established by the Los Angeles Regional Board and the limit is enforced in the NPDES permit. These daily limits cannot be exceeded under any situation without physical modification of the once-through cooling systems, which would also require modification of the NPDES permit. Therefore, ESP II would not be able to circulate any more ocean cooling water than what is currently allowed or what has been historically circulated on any given day during the year.

Historically, cooling water flow rates have varied significantly over any given range of years, months or days. For example, the maximum permitted daily flow rate on each intake structure has been experienced at least once each month of the year during the 1998-2002 baseline period (i.e., at least once during the five Januarys in this period,

etc.). Therefore, to assert that an annual flow cap will allow uncontrolled and unprecedented high volumes over any particular day, month, or season is unfounded. In fact, the proposed annual flow cap will provide an added restriction to the average daily flow rate, by restricting the annual average to approximately 63% of the maximum permitted flow volume for the year. But in no case will the daily limits on each outfall be exceeded. ESP II will not be able to circulate any additional cooling water above the highest case seen in the baseline period and therefore seasonal flow increases above the baseline period will not occur.

**e) Monthly Flow Caps Are Not Necessary But Are Being Proposed In An Effort To Reach A Consensus - Rebuttal to CEC staff testimony, Section I.B.1(b):**

Similar to the above discussion and for the same reasons, calendar years 1998–2002 is the most representative period for determining baseline cooling water flow rates for the months of February, March, and April. Baseline cooling water flow rates have reached the maximum daily flow rate on each outfall at least once during each of the 1998–2002 baseline months, including February, March and April. Therefore, the baseline period for determining impacts already includes periodic maximum flow rates on a daily basis. The proposed monthly flow caps for February, March, and April will provide an additional project enhancement and an added restriction to the maximum daily flow rate. Monthly flow caps would effectively restrict the monthly average to approximately 55% of the maximum permitted flow volume for each of these months. Therefore, future cooling water flow volume will be less than the highest case baseline period for any one day and for the monthly average. This will result in a reduction in potential cooling water flows and a corresponding reduction in entrainment.

It is generally understood that all months of the year are potentially productive months for some species in the Southern California Bight. Monthly flow caps during each of the months of February, March and April were proposed by ESP II as a measure of further assurance to concerned parties based on concerns raised by various parties at the December 18, 2002 biological resources workshop. Those concerns focused on the desire for further restrictions during the early spring months, which are generally accepted to be the period of highest fish egg and larval densities in the waters of the Southern California Bight. As discussed below, the proposed project would not cause significant effects to aquatic populations even if the annual and monthly flow caps were not proposed. Therefore, adding seasonality constraints beyond those proposed herein would unnecessarily restrict project operations, particularly during months of consistently high power demand. However, as noted above, if ESP II is required to reduce its flows to an amount less than ESP II's proposed flow cap then ESP II may be required to cease all operations, possibly in times of peak demand.

**B. STAFF AND INTERVENORS INACCURATELY CHARACTERIZE SANTA MONICA BAY AS AN ESTUARY**

CEC staff testimony states that the Santa Monica Bay has been added to the “National Estuary Program.” Similarly, the Santa Monica Baykeeper and Heal the Bay note on page 3 of their testimony that Section 320 of the federal Clean Water Act, 233 U.S.C. §1330 designates the Santa Monica Bay as part of the National Estuary Program. Based on this participation, the testimony on page 4 misconstrues, misleads, and inaccurately states: “The Warren-Alquist Act (PRC) §25527 specifically directs the CEC not to approve facilities in estuaries.”

**1. Santa Monica Bay Is Not An Estuary**

Section 320 of the federal Clean Water Act, 233 U.S.C. §1330 identifies a number of waterbodies in the United States for priority consideration for participation in the National Estuary Program. The objective of the National Estuary Program is to develop conservation and management plans for the listed waterbodies.

For the purposes of the National Estuary Program, §1254(n)(3) defines “estuary” for the purposes of participation in the National Estuary Program as follows:

For the purpose of this subsection, the term "estuarine zones" means an environmental system consisting of an estuary and those transitional areas which are consistently influenced or affected by water from an estuary such as, but not limited to, salt marshes, coastal and intertidal areas, bays, harbors, lagoons, inshore waters, and channels, and the term "estuary" means all or part of the mouth of a river or stream or other body of water having unimpaired natural connection with open sea and within which the sea water is measurably diluted with fresh water derived from land drainage.

Therefore, designation of Santa Monica Bay as part of the National Estuary Program does not “define” Santa Monica Bay as an “estuary” but provides for its inclusion to qualify for funding in a federal grant program to develop a conservation and management plan.

The SWRCB draft final 2002 303(d) list categorizes Santa Monica Bay as a “Bay & Harbor” – not as an “Estuary.” Also, Santa Monica Bay conforms with the category of “Ocean Waters” as defined in the Water Quality Control Plan for the Ocean Waters of California (Ocean Plan).<sup>2</sup>

OCEAN WATERS are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons.

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<sup>2</sup> 2001 California Ocean Plan as amended, State Water Resources Control Board Resolution No. 2000-108, November 16, 2001.

ESTUARIES AND COASTAL LAGOONS are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo and Russian Rivers.

ENCLOSED BAYS are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay and San Diego Bay.

## **2. Once Through Industrial Cooling is a Designated Beneficial Use of Santa Monica Bay**

Responsibility for the protection of water quality in California rests with the State Water Resources Control Board (“SWRCB”) and nine Regional Water Quality Control Boards (“RWQCB”s). The SWRCB’s Ocean Plan states: “The beneficial uses of the ocean waters of the State that shall be protected include industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting.”

The Los Angeles Regional Board’s Water Quality Control Plan - Los Angeles Region (“Basin Plan”) is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (i) designates beneficial uses for surface and ground waters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state’s anti-degradation policy, and (iii) describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and RWQCB plans and policies and other pertinent water quality policies and regulations, including the Ocean Plan and the Thermal Plan. Industrial Service Supply (IND), a category of industrial water supply, is defined as “Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, *cooling water supply*, hydraulic conveyance, gravel washing, fire protection or oil well re-pressurization.” [emphasis added] The Basin Plan does not designate Santa Monica Bay as an ASBS.

In addition to industrial service supply, the beneficial uses designated in the Basin Plan for the coastal waters off of Dockweiler Beach are, navigation (NAV), water contact recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), marine habitat (MAR), wildlife habitat (WILD), and spawning, reproduction and/or early development (SPWN) (a potential beneficial use). As a designated beneficial use, industrial service supply is not only an appropriate use of coastal waters, but a use that must be protected. Further, implicit in this designation is that the plankton contained in the seawater would be entrained in providing industrial cooling.

In the reissuance of the NPDES permit for the ESGS (Order No. 00-084), the Los Angeles Regional Board found that the requirements contained in the Order, as they are met, will be in conformance or in compliance with the goals of the aforementioned water quality control plans and statutes, including the requirements of 316(b) of the Federal Clean Water Act. Thus, the discharge, as permitted, is fully protective of all of the designated beneficial uses of the receiving waters.

### **3. Public Resources Code § 25527 Is Not Applicable**

Based on their contentions that Santa Monica Bay is an estuary, Heal the Bay make the incredulous statement that Public Resources Code § 25527 “directs the CEC not to approve facilities in estuaries.” A cursory review of Public Resources Code § 25527 illustrates that this statement is far from correct. Public Resources Code § 25527 provides:

#### Prohibited areas as sites for facilities; exceptions

The following areas of the state shall not be approved as a site for a facility, unless the commission finds that such use is not inconsistent with the primary uses of such lands and that there will be no substantial adverse environmental effects and the approval of any public agency having ownership or control of such lands is obtained:

(a) State, regional, county and city parks; wilderness, scenic or natural reserves; areas for wildlife protection, recreation, historic preservation; or natural preservation areas in existence on the effective date of this division.

(b) Estuaries in an essentially natural and undeveloped state.

In considering applications for certification, the commission shall give the greatest consideration to the need for protecting areas of critical environmental concern, including, but not limited to, unique and irreplaceable scientific, scenic, and educational wildlife habitats; unique historical, archaeological, and cultural sites; lands of hazardous concern; and areas under consideration by the state or the United States for wilderness, or wildlife and game reserves.

Public Resources Code § 25527 is not applicable for several reasons. First, the use of the ESGS for a power plant is consistent with the primary use of the lands. The land use of the ESGS site and surrounding areas was addressed in the Local Coastal Plan (“LCP”), which was approved by both the City of El Segundo and the California Coastal Commission. The LCP specifically found that:

The El Segundo LCP submittal gives most of the coastal zone an energy land use designation of either (MT) Marine Terminal or (PP) Power Plant. The implementing actions included in the Specific Plan are designed primarily to allow for onsite expansion or intensification of energy developments consistent with space constraints of the respective sites.

LCP, page 21.

Second, the use of the site for power generation has not had any “substantial adverse environmental effects.” ESGS was built in the 1950’s and 1960’s and has operated as a power generating facility ever since. In 1977, the Los Angeles Regional Board required Southern California Edison, predecessor to ESP II, to perform a full 316(b) analysis to determine if there were any significant impacts associated with the use of seawater for cooling. *The 316(b) study concluded that there were in fact no significant impacts associated with ESGS.* Thereafter, after continued monitoring by the Los Angeles Regional Board, the NPDES permit was again renewed in 2000 after finding no substantial adverse environmental effects associated with the operation of the ESGS. The LCP also found no adverse effects to biological resources. Specifically, the LCP found that the policies contained within the Coastal Act were not applicable. Importantly, the LCP found that there was no sensitive environmental habitat and did not find that enhancement was required under Public Resources Code § 30230.

Third, as set forth above, Santa Monica Bay is not an estuary. Even if it were, it would not be an estuary in an essentially natural and undeveloped state. Thus, the statute, by definition would not be applicable.

### **C. THERE ARE NO SIGNIFICANT EFFECTS TO AQUATIC BIOLOGY**

CEC staff and the intervenors have repeatedly stated that there are insufficient data to allow the assessment of potential significant effects from the operation of the El Segundo Generating Station. This is incorrect. The generating station has been in operation since approximately 1955 in its present configuration, utilizing the same intake structure, conduits, and pumps. The cooling water system is fully permitted and complies with all current regulations. With more than 40 years of receiving water monitoring required by the Los Angeles Regional Board no significant adverse effect has been recorded.

Data are ageless snap shots that allow scientists to identify and analyze long term trends. Data sampling frequency and distribution are part of the scientific process to collect information, analyze it and apply it. If data were only applicable to the time of

collection, studies upon which they were based would be useless and of no import. Since the mid-1950's marine environmental monitoring within Santa Monica Bay has both expanded in effort and become more focused in scope to respond to demonstrated effects and to address specific questions. If one examines the history of monitoring at open ocean coastal generating stations, such as ESGS, one will see a train of questions and answers. During the 1960's, California Department of Fish and Game wardens monitored fish losses at generating stations. Intake structures were modified to reduce the number of entrained fishes and the monitoring was added to the reporting requirements. In the 1970's under the Clean Water Act and NPDES permitting process multiyear "Thermal Effects Studies" were dictated and reviewed by the State Water Resources Control Board that addressed the effects of individual thermal discharges on resident fish, bottom-dwelling invertebrates, and intertidal communities. Responding to the required 316(b) study requirements in the late 1970's, an intensive study program that examined all of the then Edison-owned coastal generating stations was initiated. The study design and analysis was formulated with the participation of the Regional Water Quality Control Board, California Department of Fish and Game and the National Marine Fisheries Service. Scattergood Generating Station, next door to ESGS, was also studied.

As a result of these intensive studies the scope of monitoring was reduced and restructured to exclude parameters where there has been no demonstrable effect, and include only those parameters where there was potential for effect. The NPDES permit process and periodic review allows appropriate agencies and public to request changes or required additional information. Based on this long history, the operational effects of the ESGS on the beneficial uses of Santa Monica Bay are, and will continue to be, non-significant.

**1. Santa Monica Bay is Well-studied and Understood Including The Area Surrounding ESGS**

Mark Gold's testimony at paragraph 8, which states that little monitoring has occurred in "depths in the 20m or less range in soft bottomed habitats like those seen in the central Bay," is misleading.

Santa Monica Bay has been studied extensively through State- and Federally-mandated monitoring programs. Anthropogenic impacts to the Bay are well-known to all serious students of the bay. Emphasis on monitoring offshore waters is to target areas of known influence from domestic waste discharges. However, nearshore areas have also been studied. Figures BIO-1 through BIO-5 plot station locations of various monitoring studies within the Bay and demonstrate the intense sampling that has been performed throughout the Bay, including shoreward of the 20m isobath. Figures BIO-1 through BIO-4 illustrate the following parameters, respectively: water quality; sediment chemistry; benthic macrofauna; and fish trawling. Figure BIO-5 provides a composite of Figures BIO-1 through BIO-4. References used in preparing these drawings are cited provided following the figures.

The Southern California Coastal Water Research Project ("SCCWRP") has also concluded that coastal monitoring in southern California is extensive. SCCWRP

(1999-2000) states “Megabenthic (trawl-caught) invertebrate populations have been monitored extensively on the local level but not regionwide. For more than 25 years, populations of these relatively sedentary invertebrates have been monitored regularly near ocean outfalls to assess effects from wastewater discharge.”

**D. FISH LOSS DATA FROM EL SEGUNDO GENERATING STATION ADEQUATELY DEMONSTRATES THE EFFECTS OF OPERATION OF THE GENERATING STATION.**

Santa Monica Baykeeper and Heal the Bay state that: “The testimony of Dr. Richard Ambrose will demonstrate that impact conclusions of the applicant are based on data with only marginal relevance to the direct impacts of the once-through cooling system...” (Testimony Paragraph 2 under “Summary”). The testimony of Dr. Ambrose states “The continued impacts on fish is a particular concern because fish populations in Santa Monica Bay have generally decreased in recent years, as noted by El Segundo Power in their report ‘Supporting Impact Analysis of Entrainment and Impingement’. This decline is due to a variety of natural and anthropogenic causes, potentially including fishing, pollution, habitat, destruction, and entrainment and impingement of larvae and adults by several generating stations using Bay waters for cooling” (Comments of Richard Ambrose, Paragraph 2 under “Testimony”).

Physical and biological effects from the operation of the El Segundo Generating Station have been studied for more than 30 years. The intake structure itself is a relatively unbiased fish and invertebrate sampling device and long-term data display both seasonal and interannual trends seen throughout the Southern California Bight. Table BIO-1 depicts the numerically dominant and most frequently occurring fishes in impingement samples at the generating station from 1990 through 2001. The NPDES trawl program for El Segundo Generating Station was discontinued in the 1980s since intake sampling (impingement studies) provided a more accurate characterization of the source water population affected by the generating station. Twelve species comprise 90% of the fishes impinged at the generating station. Long-term trends in impingement (Table BIO-2) are primarily related to physical, oceanographic conditions, and not the effect of the operation of the generating station on source water populations.

The occurrence and abundance of larval fish are obviously associated with the occurrence and abundance of adult fish. Long-term impingement monitoring data illustrate cyclical changes in the adult fish community, and these changes are mirrored in the larval community (Moser et al. 2001). The larval fish community of the Southern California Bight has been monitored for over 50 years as part of the CalCOFI program. The CalCOFI sampling program is a cooperative effort between the National Marine Fisheries Service (“NMFS”), the California Department of Fish and Game (“CDFG”), and the University of California. Initiated in 1951, the program’s prime directive is to describe the biological and oceanographic characteristics of the California Current. Larval fish data are used by NMFS and CDFG to calculate adult fish stocks and potential yields for California fisheries. Bight-wide fish egg and larvae concentrations from 1951 through 1998 are illustrated in Figures BIO-6 and BIO-7. Bight-wide larval abundances and distributions for six of the nine fish species (for which data are available) that are



numerically dominant in entrainment and impingement monitoring at El Segundo Generating Stations are depicted in Figures BIO-8 through BIO-13. By inspection, one can see that 1) the larval distributions are widespread; 2) there are seasonal trends in larval abundance; and 3) interannual variations in larval abundance appear to be largely driven by water temperature regime shifts. Figures BIO-6 and BIO-7 clearly illustrate the spring peak in fish egg and larvae concentrations in the Southern California Bight, which corresponds to the months proposed in the Applicant's flow restriction condition.

Entrainment loss studies (such as 316(b) studies) and the use of surrogate data for the El Segundo Generating Station were based on Bight-wide studies that extended the CalCOFI sampling transects inshore and added additional sampling sites that allowed a detailed characterization of the nearshore ichthyofauna (Lavenberg et al. 1986). Based on similarities between the ichthyofauna community and the physical intake characteristics at Ormond Beach and El Segundo, plankton data from Ormond Beach studies were utilized to characterize the plankton community at El Segundo (Schlotterbeck et al. 1979). The study design was reviewed and approved by the NMFS, the CDFG, and the Los Angeles Regional Board.

The losses due to entrainment and impingement were determined to be insignificant, and in the most recently approved National Pollutant Discharge Elimination System (NPDES) permit renewal in summer 2000, the Los Angeles Regional Board agreed: *"The study demonstrated that the ecological impacts of the intake system were of an environmentally acceptable order, and provided sufficient evidence that no modification for the location, design, construction or capacity of the existing systems was required."* The conclusion that the proposed project will not cause significant adverse effects is based on relevant data, and this conclusion was recently echoed by the agency responsible for the oversight of coastal cooling water systems.

Further, entrainment data were also collected offshore and within the Scattergood Generating Station, immediately adjacent to the El Segundo Generating Station. The entrainment and impingement study performed for Scattergood, which has a maximum cooling water capacity of more than twice that at El Segundo Intake #001, also concluded that losses due to entrainment and impingement were insignificant (IRC 1981). The adequacy and applicability of that study was similarly accepted by the Los Angeles Regional Board in their 2000 reissuance of Scattergood's NPDES permit: *"The study, completed in December 1981, adequately addressed the important ecological and engineering factors specified in the guidelines, demonstrated that the ecological impacts of the intake system are environmentally acceptable, and provided evidence that no modifications to design, location, or capacity of the intake structure are required."*

The effects of generating stations on fish populations of Santa Monica Bay have been continually studied for decades. The effects on fish eggs, larvae, and adults have been documented, and the adequacy of existing data is reiterated by the Los Angeles Regional Board in their recently authored NPDES permit for El Segundo Generating Station. ESP II continues to assert that sufficient data exists to justify the determination there will be no significant biological impacts as a result of the proposed project.

**E. OPERATION OF EL SEGUNDO GENERATING STATION IS NOT CAUSING DECLINES IN FISH POPULATIONS**

**1. CEC Staff's testimony provides a vague and misleading assessment of the health of Santa Monica Bay.**

CEC staff states: "...the waters of Santa Monica Bay are experiencing serious degradation affecting a large number of marine organisms..." CEC Staff Testimony, page 2. This statement is both vague and misleading.

In the CEC staff's claim, the degradation is not described, the large number is not presented, and the marine organisms are not identified. Effects of this magnitude would surely have been noted in the "Taking the Pulse of the Bay – State of the Bay 1998" report published by the Santa Monica Bay Restoration Project and submitted by the Santa Monica Baykeeper and Heal the Bay.

To the contrary, page 14 of this report states "The health of the Bay's seafloor has been improving over the last ten years as a result of reductions in pollutant loads to the Bay. The extent of heavily contaminated sediments is smaller and benthic communities are relatively healthy. Furthermore, concentrations of contaminants in the tissues of representative fish species are down and diseases such as fin erosion are rarely observed." The report also notes on page 19 "Although pollution is often perceived as causing a decrease in fish abundance, this has not been conclusively demonstrated in the Bay." Page 2 of the "Pulse of the Bay" report states "With a few exceptions, the condition of most fish populations and other marine species appears to be relatively stable or improving, with fluctuations mostly within the range expected to occur under natural conditions."

**2. The Santa Monica Baykeeper and Heal the Bay incorrectly claim that numerous fish populations are declining in the Santa Monica Bay**

The Santa Monica Baykeeper and Heal the Bay incorrectly claim "...as described in numerous Southern California Coastal Water Research Project (SCCWRP) annual reports (1996, 1997-98, 1999-2000), numerous fish populations in the Bay have significantly declined..." (Testimony Paragraph 2 under "The Importance and State of the Santa Monica Bay").

The referenced documents make no specific statements about fish populations of Santa Monica Bay. The referenced documents summarize Bight-wide studies, which included stations in Santa Monica Bay.

SCCWRP (1996) analyzed recurrent groups of fishes on the mainland shelf of southern California in 1994. In summary, changes in recurrent groups were attributed to modifications of wastewater treatment and changes in oceanographic conditions. Fish abundance is not even addressed in this document.

SCCWRP (1997-98) analyzed demersal fish assemblages of the mainland shelf of southern California in 1994. We find no reference to fish populations of Santa Monica Bay, or any mention of declining fish populations.

One of the documents submitted in SCCWRP (1999-2000) is entitled “Relative abundance and health of demersal fish species on the southern California shelf in 1994”. Again, no decline in fish populations is discussed. The authors of this document conclude “Although the shifts in abundance and occurrence between the two periods are likely due at least in part to a warming of the oceanic environment during the 1980s (Smith 1985), a difference in the distribution of samples between the 1972-1973 and 1994 surveys may also play a role.” With respect to fish health, they note “Regionwide, demersal fish populations were relatively healthy, with notable decreases in anomalies since the 1970s.” The authors of the document “Relative abundance and health of megabenthic invertebrate species on the southern California shelf in 1994” concluded “Regionwide, megabenthic invertebrate populations appear to be relatively healthy.”

Other documentation provided by Santa Monica Baykeeper and Heal the Bay, such as the City of Los Angeles’ “Santa Monica Bay Biennial Assessment Reports” from 1997-1998 and 1999-2000 describe the fish and invertebrate communities as monitored by the City’s Environmental Monitoring Division, but these reports make no mention of “significant declines” in fish populations. As noted previously, documents submitted by the Santa Monica Baykeeper and Heal the Bay conclude most fish populations in Santa Monica Bay are relatively stable or improving.

In summary, ESP II refutes claims that the fish populations of Santa Monica Bay are declining. Both CEC staff and intervenors make these claims without providing any evidence or data to support them. The El Segundo Generating Station has operated for more than 50 years, and results of ongoing monitoring programs, combined with independent studies and other monitoring programs in the bay, conclude that overall, the fish community of Santa Monica Bay is diverse and healthy.

**F. ESPR SHOULD BE APPROVED WITH THE BIOLOGICAL CONDITIONS OF CERTIFICATION OFFERED BY ESP II**

ESP II has suggested three proposed biological conditions of certification BIO 1 through 3, inclusive, which are hereby incorporated by reference from the Second Prehearing Conference Statement of El Segundo Power II LLC filed and served on November 3, 2003. In BIO-1, ESP II proposes that it be ordered to provide 1 Million Dollars to the Santa Monica Bay Restoration Project. In BIO-2, ESP II proposes that it be obligated to perform an aquatic filter barrier feasibility study. Both of these conditions represent significant contributions/ enhancements incorporated into the project. Finally, BIO-3 proposes the ESGS flow limit. Nothing has been offered by any party that undermines the fact that ESP II will utilize an unmodified existing, operating and NPDES permitted cooling system. The conditions as proposed by ESP II provide more than the required conditions for this project. Moreover, the proposed flow cap provides extra enhancement as does the one million dollar payment to the Santa Monica Bay

Restoration Project. ESP II satisfies all state and federal laws, ordinances, regulations and standards and should be approved.

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## **VII. ADDITIONAL PROFESSIONAL RESUMES AND DECLARATIONS**

ESP II submits herein the professional resumes for ESP II expert witnesses Marc Kodis and Robert Collacott and a signed declaration for Mr. Collacott.

Dated: February 10, 2003

LIVINGSTON & MATTESICH  
LAW CORPORATION

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John A. McKinsey  
Attorneys for El Segundo Power II LLC

**[INSERT THIS AT THE END OF THE MBC BIOLOGY MATERIAL]**

## **Santa Monica Bay Sampling Station Map References for Figures BIO-1 through BIO-5**

### **Figure BIO-1. Water Quality Station References**

City of Los Angeles, Bureau of Sanitation, Hyperion Treatment Plant. 1983. Santa Monica Bay monitoring study. Examination of water quality, sediment parameters, trace contaminants, macrofauna. Annual Report 1983. 70 p. plus appendices

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### **Figure BIO-2. Benthic Macrofauna Station References**

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### **Figure BIO-3. Sediment Chemistry Station References**

Allen, M.J., S.L. Moore, K.C. Schiff, S.B. Weisberg, D. Diener, J.K. Stull, A. Groce, J. Mubarak, C.L. Tang, and R. Gartman. 1998. Southern California Bight 1994 Pilot Project: V. Demersal Fishes and Megabenthic Invertebrates. Southern California Coastal Water Research Project, Westminster, CA. 157 p. plus appendices.

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#### **Figure BIO-4. Fish Trawling Station References**

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Unpublished data.

### **Figure BIO-5. Combined Sampling Station References**

Figure BIO-5 is a composite of the information provided in Figures BIO-1 through BIO-4. Therefore, all of the references cited for Figures BIO-1 through BIO-4 also apply to Figure BIO-5.